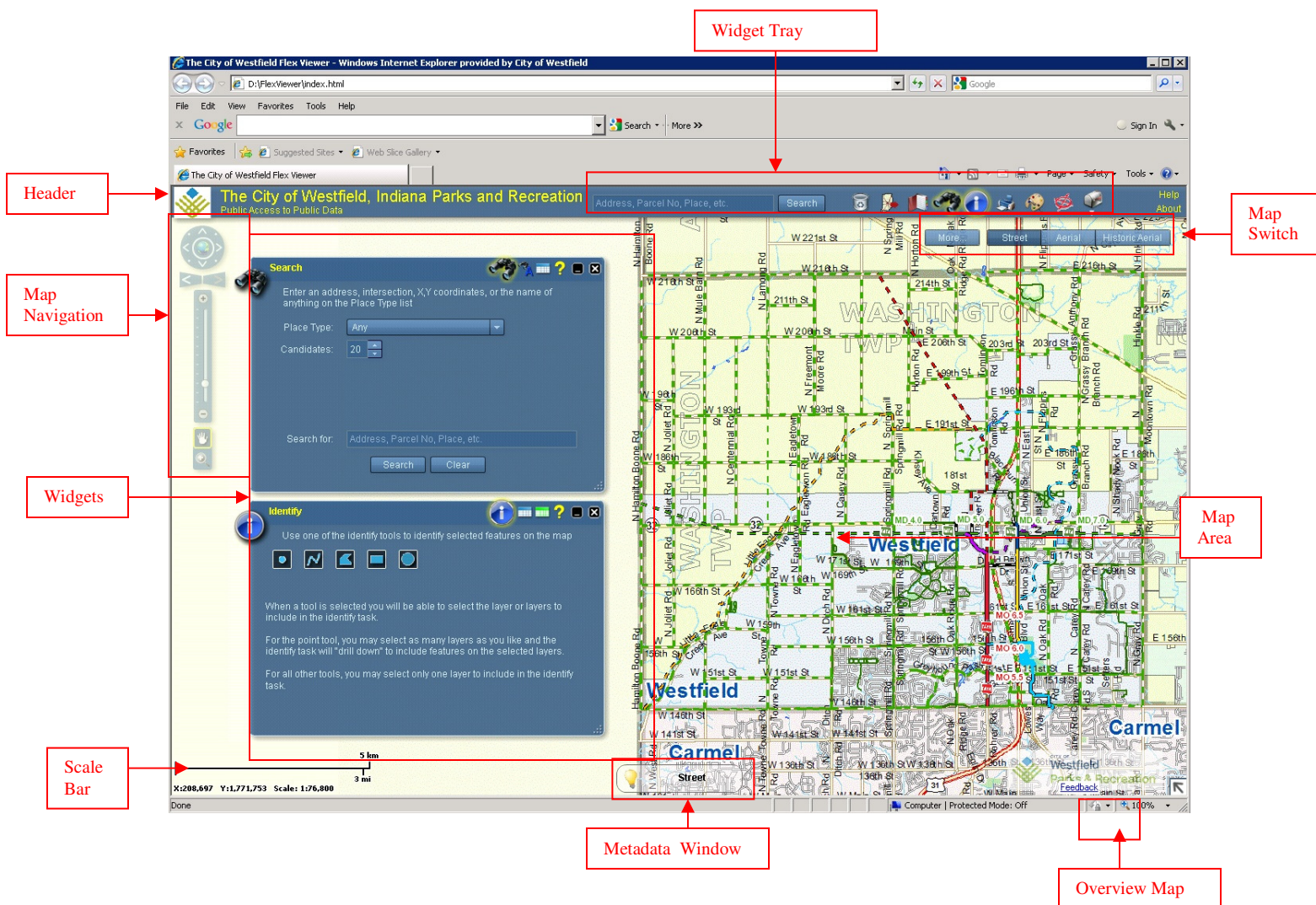


An Introduction to the City of Westfield's Online Mapping

Part 1: Introduction to the Map Viewer

The City of Westfield's Online Map Viewer is developed and maintained by the Information System Services Department using ESRI's ArcGIS Server and Adobe's Flash technology. It provides quick and convenient access to public information.

The figure below shows the layout of the standard viewer with the major components labeled:



Map Navigation

The map navigation features tools used to change the view of your map. This tool supports zooming and panning to move your viewer to the desired location and scale.



Navigation Panwheel/Zoom to Extent

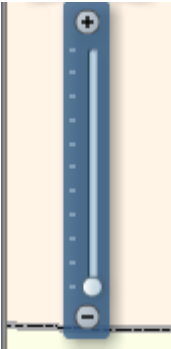
Clicking the globe icon at the center of this tool zooms the user to the full extent of the map. Clicking on the arrows on the panwheel pans the map in the direction the arrow points. The points in between the arrows will also pan the map in the sub-cardinal directions.



Zoom Previous/Zoom Next

Clicking the left arrow on this tool will take the user to the most recent extent prior to the current one. The right arrow takes you to the view after the current one. By clicking the buttons you can sequentially scroll backward or forward through your extents.

Scale Slider Bar



This tool allows you to zoom in and out of the map by depressing your mouse button over the arrow and sliding it up to zoom in and down to zoom out. You can also click on the + or – buttons to zoom in or out.



Pan

Use this tool to move the map in any direction while maintaining the current scale. Click on the tool icon, then click on the map once, hold down the cursor, and drag the map. You can also use this tool to re-center the map. After you select the tool, double-click the point of interest on the map. The map will move to the center point of where you clicked *and zoom in*. The Pan tool is also used to access the click-tip functionality (See p. 16)



Zoom In

Use this tool to view a smaller area in greater detail. Click the tool icon and move over the area of the map that you wish to view. Click once on the map, hold down the cursor, and then drag. This will create a box outlined in red showing the area that will be zoomed into. The smaller the box, the more detail you will get.

Mouse

The center scroll wheel on the mouse can be used to zoom in and out. Pushing the wheel away zooms in and pulling the wheel towards the user zooms out.

Clicktips

Clicktips are a quick way to identify a single feature on the map. They are similar to tooltips, except the user has to click on the map to see them.

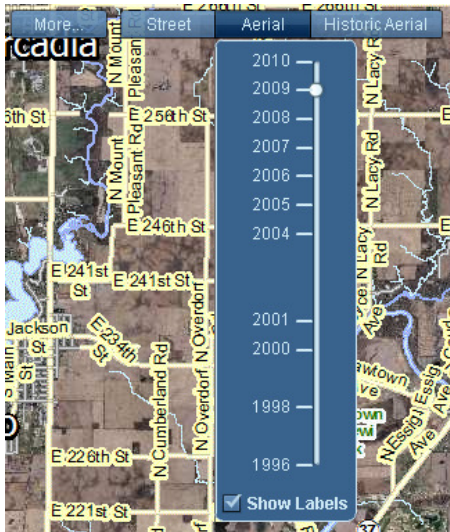


When the user clicks on the map, a **Clicktip** will appear for the top feature at that point. The feature will be highlighted and the user will see a popup window showing the feature's attributes and measurements. The popup window will disappear after a few seconds unless the mouse pointer is over it or the feature clicked. It will reappear if the mouse is moved over the selected feature. To clear the selected feature, click on the **Close** Button or use the **Clear Graphics** on the Widget Tray.

Map Switcher



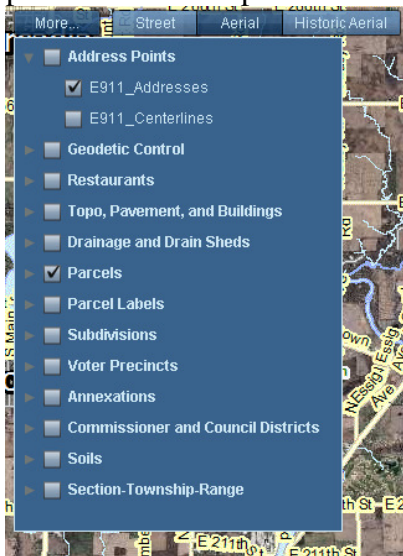
The map switcher allows the user to switch between the standard basemap and the historic and contemporary aerial photography as well as add additional layers to the map. To turn on the aerial photographs the user clicks on either the **Aerial** or **Historic Aerial** button.





This will activate the slider control which allows the user to select the year they are interested in by either holding the mouse button down and sliding the point to the year of interest, or by clicking anywhere on the line. There is also a check box which allows the user to turn the labels on or off.

To switch back to the basemap the user needs to click on the **Street** button.

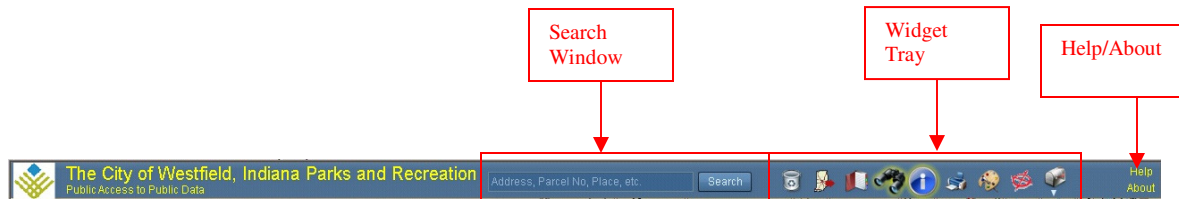
The **More..** button allows the user to access additional layers of information that are not part of the basemap.



Check or unchecking a box will turn a layer on or off on the map. If a layer has a  icon next to it, it means there are additional layers nested under the group layer. By clicking on the  icon the user can expand to these lower layers. Hovering over a layer allows the user to see a layer's metadata which is data about the data.

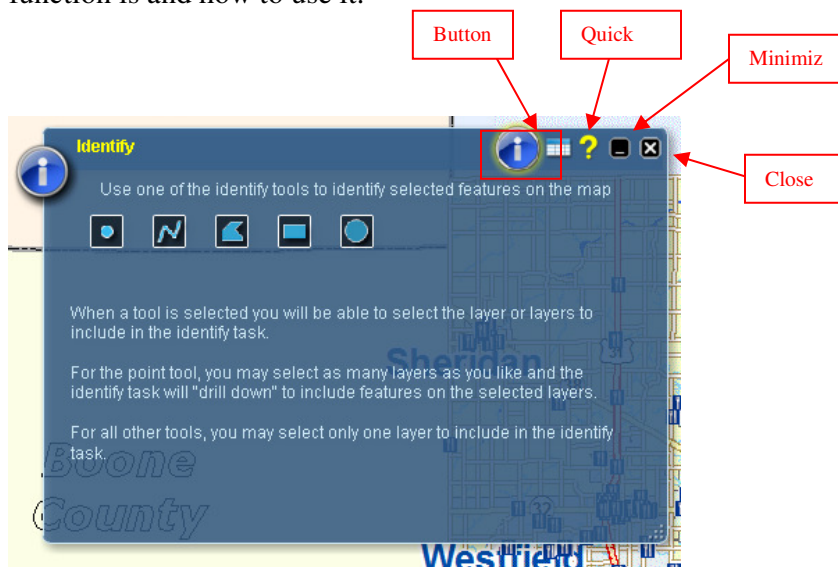
Map Header/Widget Tray

The map header/widget tray is the starting point for accessing much of the viewer's functionality. It serves as the primary toolbar for accessing the application Widgets. The figure below shows its major components:

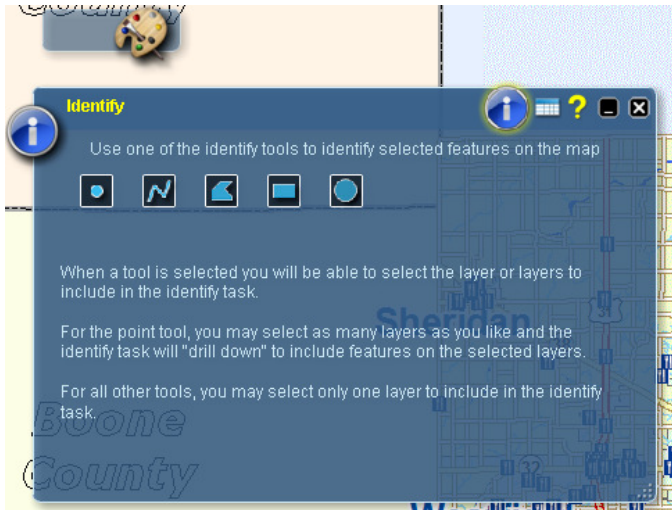


Widgets

A widget is a tool that is designed to perform a specific set of tasks in Flex. There can be many tabs within a widget. A widget can be minimized or closed like a window. Each widget contains a Quick Help icon which provides a link to information on what a widget's function is and how to use it.



The user can have multiple widgets opened at the same time. The example below shows 2 widgets that have been accessed. The bottom one is open while the top one has been minimized. To reopen a widget simply click on the tool icon.

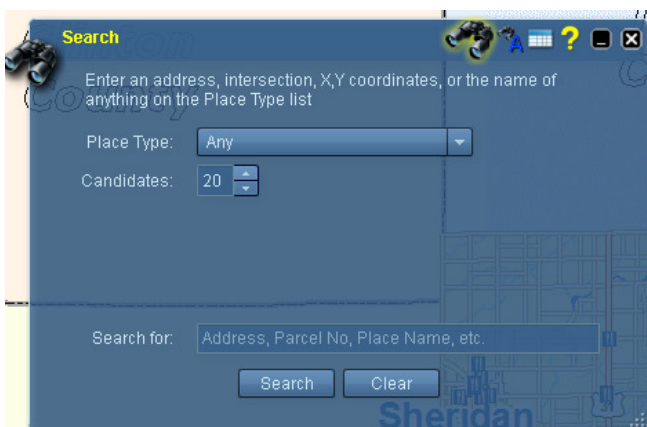


Widgets can be moved anywhere in the map area by holding the mouse button and dragging the widget. They can also be resized by holding down the mouse button down on the right corner and moving the mouse up and left to make it smaller or down and right to make it larger. To return the widget to the default size, double click the right corner.

Search


The search tool is a widget that provides an easy way to search the attributes of the feature classes in the map. The widget has three tabs: Search, Advanced Search and Results. The Search tab is made up of a dropdown that allows the user to pick from a list of feature types, a “candidates input” that allows the user to set the number of results returned and a “Search for” dialog window that allows the user to enter what they are searching for. By clicking the Search button, the search is started.

The Clear button at the bottom of the widget will clear the search text, the results, and the graphics used to highlight the results on the map.







Results Tab



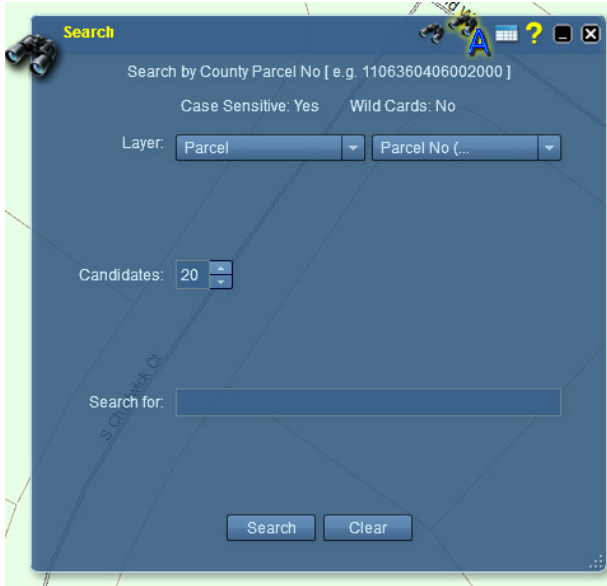
Once the search is complete, the widget will shift to the results tab. Results are organized in a horizontal accordion display. The result locations are marked by a map tip. To zoom to a given result on the map, the user clicks on a given line. This zooms the map to the selected feature, expands it in the results tab, and marks it with a pushpin. 

The selected result in turn contains vertical accordion tabs. The first tab is the attributes tab which lists the pertinent attribute fields. The second tab is the measurement tab and will vary based on whether the selected result is a point, line or polygon. A point result will have the coordinates, lines will have length, and polygons will have perimeter and area. In all of these instances you can change the measurement units.

Some features will give you a list of Related features . These are features that are related geographically. For example, an Address Point is usually in a Parcel and a Parcel is frequently in a Subdivision . If related features are found, you will have the option of adding them to the list of results.

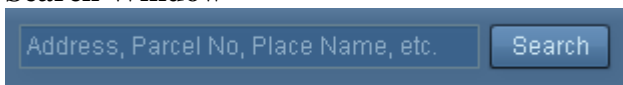
There are tools on the header of the selected feature record in the Results Tab. With these tools, you can flash a feature , zoom to a feature , display one or more hyperlinks , and remove the feature  from the results. Hyperlinks will open in a new browser window or tab.

Advanced Search Tab



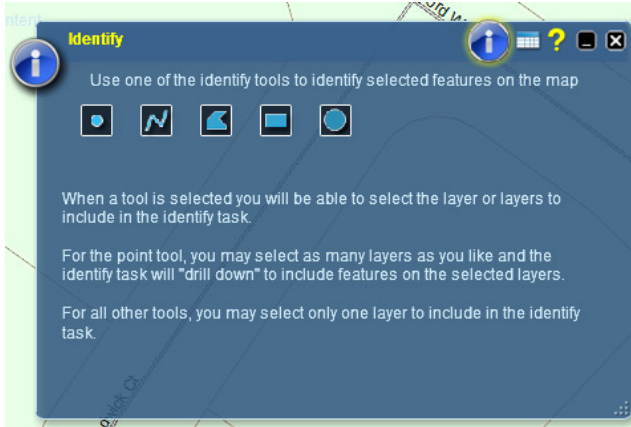
The Advanced Search allows a user to better refine the search criteria to reduce the number of results. Unlike the Search tab, the user must set the target layer and on some layers the field. Again the “candidates” can be set and the “Search for” works the same as the standard search.

Search Window



The Search widget can also be accessed by using the Search window in the Widget tray. Simply type in any text that you think might have a geographic location and click the Search button. This will in turn open up the search widget in the results tab.

Identify



The Identify Widget offers the inverse of the Search. It lets the user identify features on the map. The attributes and measurements of each selected feature are displayed in the Results Tab similar to the search tool.

There are two methods for selecting the features you want to identify:

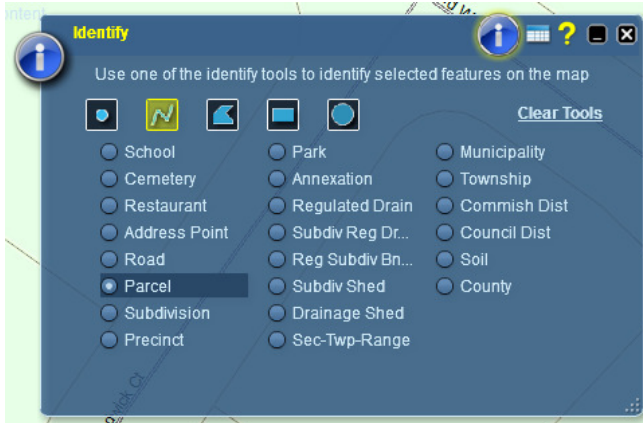
Point Method



The point method performs a "vertical" identify. In other words, it will "drill down" through the layers selecting each feature it passes through. When you select the Identify by Point tool, you may then designate one or more layers to include in the identify by checking or unchecking the boxes on the list of available layers. You can also select or unselect all layers using the buttons at the bottom of the widget. When you draw a point on the map with this tool, the application will identify features that intersect the point whether they are visible or not.

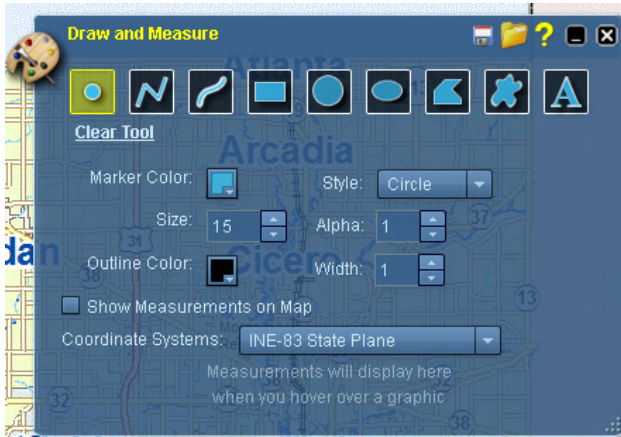
When a feature selected by the point method is highlighted in the results tab, it is highlighted on the map.

Line or Polygon Method



The line or polygon method performs a “horizontal” identify. In other words, it will identify features on just one layer. When you select the Identify by Line, Identify by Polygon, Identify by Rectangle, or Identify by Circle tool, you may then designate only one layer to include in the identify. When you draw a graphic on the map with one of these tools, the application will select all of the features on the designated layer that intersect the graphic you have drawn. The tool will select features whether they are visible or not, but only features that would be visible if their layer was turned on.

Draw and Measure



The draw tool will let you put temporary marks/draw on the map viewer without permanently altering the map or live map layers. The draw marks will also appear on printed maps. When you click on the tool icon a widget appears showing various drawing instruments along with text, color, and font size/line width.

The draw instruments are as follows:



Draw Point: will put a dot on the map wherever you click the cursor.



Draw Line: will draw straight lines only. Click once to start the line, click again to insert a vertex/corner, and double click to finish the line.



Draw Freehand Line: will draw straight and curved lines. Click and hold down the cursor and the line will follow behind the movement of the cursor. When you are finished, release the cursor and the line will end.



Draw Rectangle: will draw a rectangle. Click and hold down the cursor and a box will expand between the cursor and the point of origin. Release the mouse button to complete the box.



Draw Circle : will draw a circle. Click and hold down the cursor and a circle will expand between the cursor and the point of origin. Release the mouse button to complete the box.



Draw Ellipse: will draw an ellipse. Click and hold down the cursor and an ellipse will expand between the cursor and the point of origin. Unlike the circle tool the height and width axes are independent of one another allowing the user to change the shape of the ellipse. Release the mouse button to complete the box.



Draw Polygon: will draw straight edge polygons. Click once to start the shape, click again to insert a vertex/corner, and double click to finish the shape.

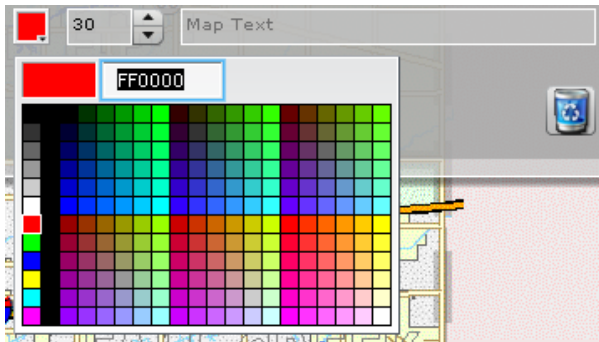


Draw Freehand Polygon: will draw straight and curved edge polygons. Click and hold down the cursor and the line will follow behind the movements of your cursor. When you are finished, release the cursor and the polygon will close itself.



Draw Text: will add words to the map. Type the text into the text box found in the widget. Select the color and font size you want. Click once on the draw text icon. Then click once on the map where you want the text to appear and the text will be displayed.

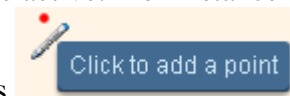
Note: you must select the color and font size *before* you click the map or the text will not inherit the effects. To open the color selector, click the color block. Select the color block again to close.



To measure, click the check box next to measure before you start drawing. A drop down menu will appear which allows the user to select the units of measure. Set this to the desired, and start drawing. The resulting measurement will be displayed on the map and in the results dialog just below the tool graphics.

Note that the cursor will reflect whatever drawing tool you have active. For instance

when using the point drawing tool, the cursor will look like this
The tooltip will give you a clue as to how to use the tool.



Context Sensitive Functions

There are four context sensitive functions that appear below the drawing tools when appropriate. These tools appear as underlined, bold text, but behave as buttons:

Clear Tool - This will cancel a drawing tool you have selected so you can interact with the map without drawing a graphic.

Stop Editing - This will stop an editing session on a graphic. The Stop Editing function is always paired with the Edit Mode label signifying you are editing a graphic.

Reset Symbology - This will restore all symbology settings for all drawing tools to their default values.

Clear Graphics - This will clear all graphics you have drawn with this widget from the map. It has no effect on graphics drawn by other widgets.

Measurements: The tool allows the user to view measurements in two ways. The first is to hover over graphics feature once it is drawn. The measurements will appear in the window at the bottom of the tool. Units of measure can be selected using the dropdown menus just above the measurement window. Measurements can also be displayed on the map by checking the Show Measurements on Map checkbox before a feature is drawn.

Interacting with a Graphic

Whenever the mouse is over a graphic, the graphic will be highlighted and its measurements will display on the widget. There is also a context menu you can access with a right-click of the mouse (control-click for Macintosh). These functions affect only the graphic under the mouse:

Delete graphic - deletes the graphic.

Stop editing - stops editing the graphic.

Update symbology - updates the symbology to the currently selected symbology on the widget.


Update measurements - adds measurements to the map if there are none or updates the units of the measurements to the units currently selected on the widget.


Remove measurements - deletes the measurements from the map.

Cancel - closes the context menu.

Delete graphic and Cancel are always available. Stop editing is available only when editing the graphic, and Update symbology, Update measurements, and Remove measurements are only available when you are not editing the graphic.

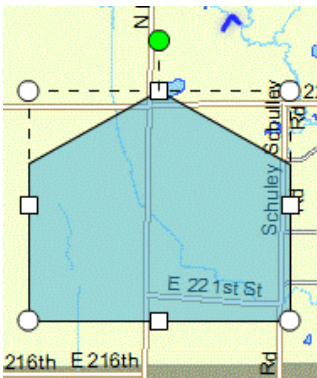
Saving Graphics

Use the Save Graphics to File tool  to save the graphics. Use the Open Saved Graphics

File tool  to open a file of saved graphics. When saving graphics, all of the graphics you have drawn will be saved. There is no way to save individual graphics. You can send a saved graphics file to another user and they can display the graphics on their map using the same Flex Viewer application.

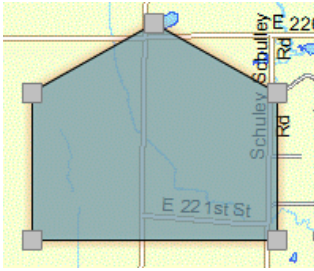
Editing Graphics

All graphics except measurement labels can be edited. When you edit a graphic, the measurements on the widget and on the map will be updated automatically. Click on a graphic when the cursor tip says Click to edit to begin editing a graphic. Points and text can only be moved, but lines and polygons have two edit modes: Edit Shape and Edit Vertex. You can toggle between these modes by clicking on the graphic.



Edit Shape is the mode that allows you to move, stretch, and rotate the graphic. It shows a bounding box around the graphic with "grips" at the corners and midpoints of each side and a green circle above. Clicking and dragging inside the bounding box will move the graphic.

Clicking and dragging a "grip" will stretch or scale the graphic. Clicking on the green circle and dragging rotates the graphic.



Edit Vertex is the mode that allows you to move a vertex, add a vertex, or delete a vertex. It displays a gray square at each vertex. Moving a vertex is accomplished by clicking on a vertex and dragging it to a new location. When the mouse is over the graphic between vertices, a new vertex symbol will appear. Clicking when this symbol is visible adds a vertex. Right-clicking a vertex and selecting Delete vertex from the context menu deletes a vertex. You can also move a polygon graphic in this mode by clicking somewhere inside the polygon (not on the edge) and dragging.

Editing Graphic Symbology

When a graphic is in Edit Mode any changes to the symbology settings on the widget take effect immediately. This gives you the chance to see the symbology changes as you make them. A common workflow is to change the symbology dynamically on one graphic and then apply that symbology to other graphics with the Update Symbology function on the context menu.

Resetting the Symbology

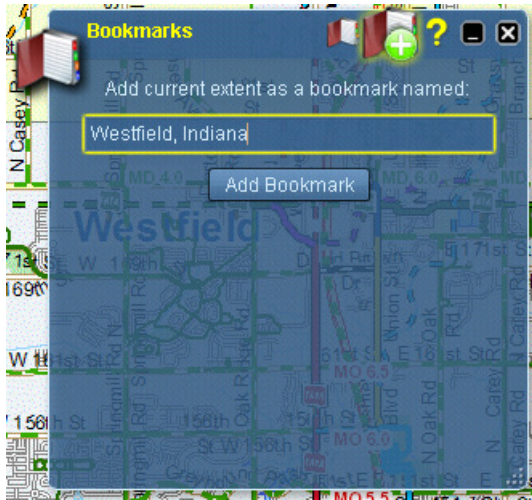
When you make changes to the symbology settings on the widget for any type of graphic, a Reset Symbology function appears on the widget below the drawing tools. This resets all symbology settings for all drawing tools to their default values. If you use this function while editing a graphic, it will apply the default symbology to the graphic being edited.

Stop Editing a Graphic

There are several ways to stop editing a graphic:

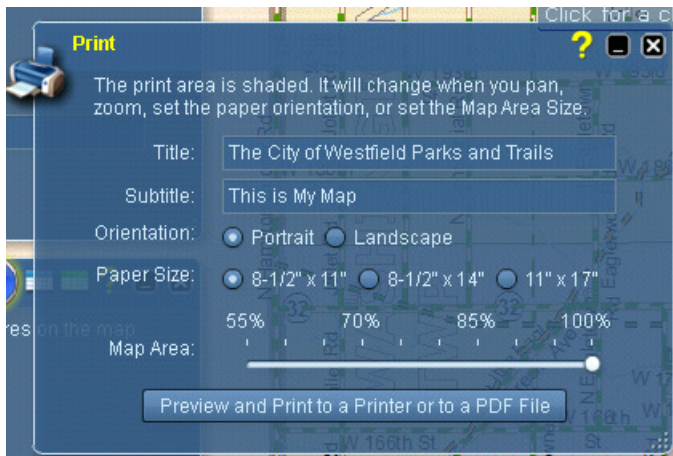
- Click on the Stop Editing function on the widget just below the drawing tools
- Start editing a different graphic
- Right-click on the graphic and select Stop editing from the context menu
- Select another drawing tool from the widget
- Select a tool from a different widget
- Select the Pan tool or the Zoom in tool from the Navigation control

Bookmarks



This tool brings up a widget containing all the current bookmarks that have been created. To zoom to an existing bookmark, just click on the entry. To create a new bookmark, make sure the map is zoomed and panned in to the area you wish to save. Click the 'Add Bookmark' icon. Type the name you want for the bookmark, click 'Add Bookmark' and it will be saved to your list.

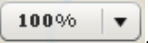
Print or Save Map



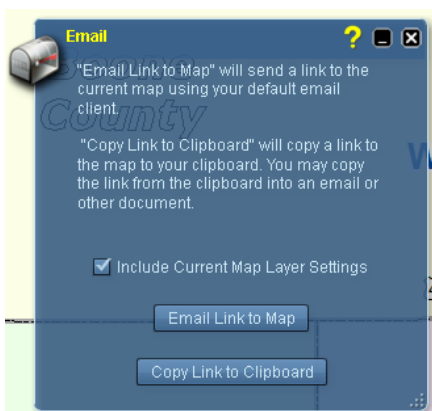
With the Print or Save Map tool the user enters a title and subtitle and sets the orientation, and the paper size. The map area to be printed can also be customized via a sliding control. The area to be printed is highlighted on the map with a red tinted box. Once the configuration settings have been set, the user hits the “preview and print or save to PDF” button. This will open the preview window shown below.



The user can then send the map to the printer  or save the map to a PDF . The size of the preview window can also be controlled by using the “Size of this Widget”

dropdown . Once the user prints or saves, they will be returned to the original widget.

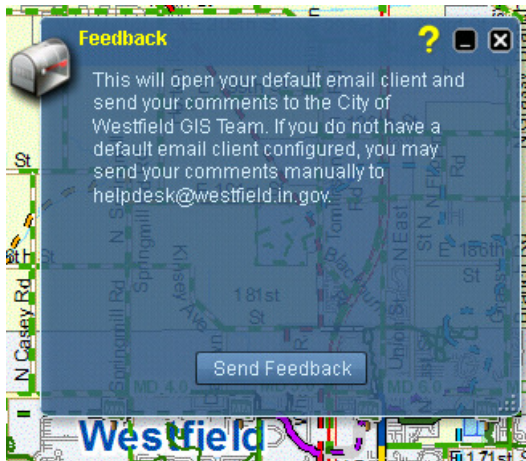
Email



The Email widget allows the user to email a URL link to the location/extents of the current map view from the user’s default mail client. There is also a check box that

allows the user to include the current map layer settings (more layers, transparency changes, etc.)

Feedback



The feedback tab allows the user to email comments to the City of Westfield GIS Helpdesk. Like the email widget, the feedback widget utilizes the user's default email client. There is also a hotlink to the feedback tool in the lower right hand corner of the map.

Other Tools



Clear Graphics Tool – This tool will clear any graphics layers on the map. This includes graphics from Clicktips, the Draw and Measure, Identify & Search Widgets.



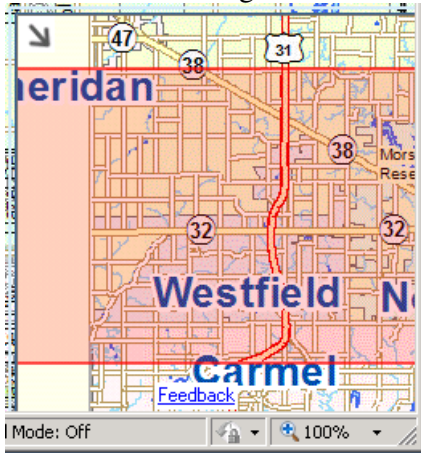
Export Map to JPEG – This tool will export the map and any graphics on the map to a JPEG file to the location you specify on your computer. No widgets, tool bars, navigation tools, scalebar, logos, or other objects will be included in the exported image.



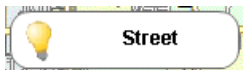
Help/About – These links open up different tabs on the same widget that give you more information about the application including tips and tricks, What's new, etc. There is also a link to an online version of this document.



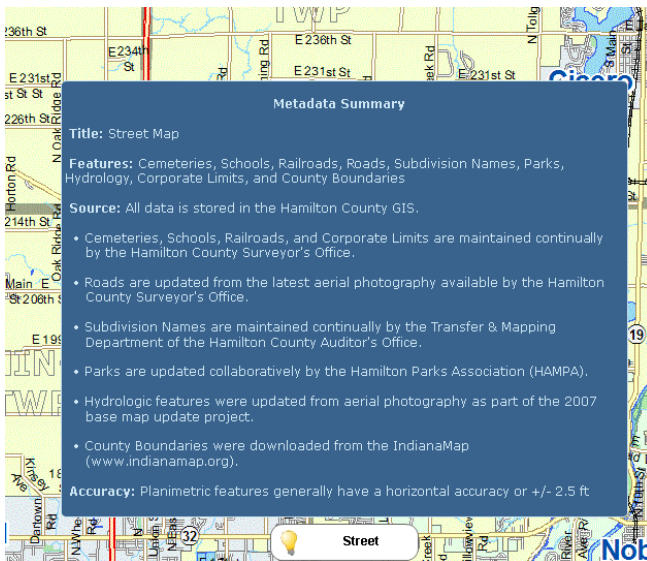
Overview Map – The Overview Map is minimized by default. Click on the arrow icon in the lower right hand corner of the main map area will open the overview map.



Once it is open, the overview map shows the extent of the current map area in context to a larger area using a smaller scale map. The red box represents the current map extents. The Overview Map can be used as a navigational tool by holding the left mouse button down and dragging the red box to a new area of interest. To minimize the map, click the arrow again.



Metadata Window



The Metadata Window contains information about the map. By hovering over the window, the metadata will be displayed in a tooltip. The window can be minimized by clicking on the lightbulb icon.